12-27-99 A

Please type a plus sign (+) inside this box [+]

PTO/SB/05 (12/97)
Approved for use through 09/30/00. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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jc662 U.S. PTO 12/23/99

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

jc675 U.S. PTO 09/470669 12/23/99

Attorney Docket No. 42390.P8085 Total Pages 3

First Named Inventor or Application Identifier Kelan C. Silvester

Express Mail Label No. EL431890121US

ADDRESS TO:	**Assistant Commissioner for Patents** **Box Patent Application** **Washington, D. C. 20231**

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. X Fee Transmittal Form
   (Submit an original, and a duplicate for fee processing)

2. X Specification (Total Pages 17)
   (preferred arrangement set forth below)
   - Descriptive Title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings (if filed)
   - Detailed Description
   - Claims
   - Abstract of the Disclosure

3. X Drawings(s) (35 USC 113) (Total Sheets 2)

4. X Oath or Declaration (Total Pages 3)
   a. X Newly Executed (Original or Copy)
   b. ___ Copy from a Prior Application (37 CFR 1.63(d))
      (for Continuation/Divisional with Box 17 completed) **(Note Box 5 below)**
   i. ___ DELETIONS OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

5. ____ Incorporation By Reference (useable if Box 4b is checked)
   The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. ____ Microfiche Computer Program (Appendix)

7. ____ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
   a. ____ Computer Readable Copy
   b. ____ Paper Copy (identical to computer copy)
   c. ____ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. _X_ Assignment Papers (cover sheet & documents(s))
9. ____ a. 37 CFR 3.73(b) Statement (where there is an assignee)
   ____ b. Power of Attorney
10. ____ English Translation Document (if applicable)
11. ____ a. Information Disclosure Statement (IDS)/PTO-1449
   ____ b. Copies of IDS Citations
12. ____ Preliminary Amendment
13. _X_ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
14. ____ a. Small Entity Statement(s)
   b. Statement filed in prior application, Status still proper and desired
15. ____ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. _X_ Other: Certificate of Mailing

17. **If a CONTINUING APPLICATION,** check appropriate box and supply the requisite information:
   ___ Continuation ____ Divisional ____ Continuation-in-part (CIP)
   of prior application No: _____

18. **Correspondence Address**
   ____ Customer Number or Bar Code Label _____ (Insert Customer No. or Attach Bar Code Label here)
   or
   _X_ Correspondence Address Below

NAME David Kaplan
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
ADDRESS 12400 Wilshire Boulevard
Seventh Floor
CITY Los Angeles STATE California ZIP CODE 90025-1026
Country U.S.A. TELEPHONE (408) 720-8598 FAX (408) 720-9397

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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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FEE TRANSMITTAL

TOTAL AMOUNT OF PAYMENT ($) 818.00

Complete if Known:
Application No. New Application
Filing Date Herewith
First Named Inventor Kelan C. Silvester
Group Art Unit Not Yet Assigned
Examiner Name Not Yet Assigned
Attorney Docket No. 042390.P8085

METHOD OF PAYMENT (check one)

1. [ ] **The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:**

   Deposit Account Number _____
   Deposit Account Name _____

   [X] **Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17**

   [ ] **Charge the Issue Fee Set in 37 CFR 1.18 at the Mailing of the Notice of Allowance, 37 CFR 1.131(b)**

2. X **Payment Enclosed**
   X **Check**
   _____ **Money Order**
   _____ **Other**

FEE CALCULATION (fees effective 10/01/97)

1. FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	760	201	380	Utility application filing fee	$760.00
106	310	206	155	Design application filing fee	
107	480	207	240	Plant filing fee	
108	760	208	380	Reissue filing fee	
114	150	214	75	Provisional application filing fee	

SUBTOTAL (1) $ 760.00

2. CLAIMS

			Extra		Fee from below		Fee Paid
Total Claims	21	– 20 =	1	X	18.00	=	18.00
Independent Claims	3	– 3 =	0	X	78.00	=	00.00
Multiple Dependent Claims				X		=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
103	18	203	9	Claims in excess of twenty	00.00
102	78	202	39	Independent claims in excess of 3	00.00
104	260	204	130	Multiple dependent claim	
109	78	209	39	Reissue independent claims over original patent	
110	18	210	9	Reissue claims in excess of 20 and over original patent	

SUBTOTAL (2) $ 18.00

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for response within first month	
116	380	216	190	Extension for response within second month	
117	870	217	435	Extension for response within third month	
118	1,360	218	680	Extension for response within fourth month	
128	1,850	228	925	Extension for response within fifth month	
119	300	219	150	Notice of Appeal	
120	300	220	150	Filing a brief in support of an appeal	
121	260	221	130	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive unavoidably abandoned application	
141	1,210	241	605	Petition to revive unintentionally abandoned application	
142	1,210	242	605	Utility issue fee (or reissue)	
143	430	243	215	Design issue fee	
144	580	244	290	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	40.00
146	760	246	380	For filing a submission after final rejection (see 37 CFR 1.129(a))	
149	760	249	380	For each additional invention to be examined (see 37 CFR 1.129(a))	
Other fee (specify)					
Other fee (specify)					

SUBTOTAL (3) $ 40.00

*Reduced by Basic Filing Fee Paid

SUBMITTED BY:

Typed or Printed Name: David Kaplan

Signature _____ **Date** 12/22/99

Reg. Number 41,105 **Deposit Account User ID** _____ (complete if applicable)

UNITED STATES PATENT APPLICATION

FOR

NOTEBOOK COMPUTER WITH INDEPENDENTLY FUNCTIONAL, DOCKABLE CORE COMPUTER

Inventor:

Kelan C. Silvester

Prepared by:

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

Attorney Docket No.: 42390.P8085

NOTEBOOK COMPUTER WITH INDEPENDENTLY FUNCTIONAL, DOCKABLE CORE COMPUTER

The present invention relates to computer systems and more particularly to a computer system having a docking port that receives an electronic device comprising a processor and providing independent functionality.

BACKGROUND

Notebook computers, including laptops, sub-notebooks, and other mobile computers that include a keyboard and display, are becoming increasingly pervasive in our society. Notebook computers are also becoming increasingly powerful, able to effortlessly run applications that include presentation graphics, spreadsheets, and word processors. Unfortunately, notebook computers may be unnecessarily large and heavy for certain applications. For example, a notebook computer may include applications to schedule appointments in an electronic calendar or to store names and numbers in an electronic address book. If a user intends to use only these applications during a particular period of time, a good portion of the bulk of a typical notebook computer may be superfluous. Instead, all that may be needed is a small, hand-held device such as a personal data assistant (PDA).

Unfortunately, to realize the advantages of both a PDA for running simple applications and a notebook computer for running more advanced applications, a user must purchase one of each. Much of the electronics contained in a PDA and in a notebook computer, however, is redundant.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is illustrated by way of example and not limitation in the accompanying figures in which like references indicate similar elements and in which:

Figure 1 is a computer system and undocked electronic device formed in accordance with an embodiment of the present invention;

Figure 2 is a schematic diagram of the computer system and electronic device of Figure 1 when the electronic device is docked in the computer system.

DETAILED DESCRIPTION

In accordance with an embodiment of the present invention, a notebook computer includes a docking port (or bay) to receive a core computer. The processor of the core computer serves as the system processor for the notebook computer when the core computer is docked in the notebook computer. When the core computer is undocked, the processor serves as the system processor for the core computer. The core computer includes memory containing a mini operating system to be booted when undocked, and the notebook computer includes memory containing a full operating system to be booted when the core computer is docked. When the core computer is docked, the notebook computer memory is synchronized with the core computer memory, a battery in the core computer is charged, and the processor runs at a higher frequency and higher voltage than when the core computer is undocked.

A more detailed description of embodiments of the present invention, including various configurations and implementations, is provided below.

As used herein, the term "when" is intended to mean during all or some portion of time within the period of time that satisfies a condition, as opposed to the term "whenever" which is intended to mean during the entire period of time that satisfies a condition. For example, the statement that a computer charges the battery of a device when the device is docked is intended to mean that the battery may be charged during all or some portion of the period of time during which the device is docked. The term "data" is used herein to describe data, instructions, addresses, or any other information that can be represented by one or more bits.

Figure 1 is a notebook computer 100 and undocked electronic device 101 formed in accordance with an embodiment of the present invention. Notebook computer 100 includes docking port 110 designed to receive electronic device 101. A notebook computer is any type of mobile computer such as a laptop, sub-notebook, or tablet computer. For an alternate embodiment of the present invention, the notebook computer may be any base computer including, for example, a mobile computer, desktop computer, workstation, or server.

Electronic device 101 of Figure 1 is capable of operating in two modes. In a first mode, electronic device 101 is docked into computer 100. When in this mode, computer 100 is able to access data stored in electronic device 101, and the processor in electronic device 101 operates as the system processor of the notebook computer. In a second mode, electronic device 101 is undocked. When in this mode, electronic device 101 functions as a personal data assistant (PDA) or other hand-held, independently functional computer system. Electronic device 101 may hereinafter be referred to as a "core computer."

The housing of core computer 101 of Figure 1 is designed to be docked into docking port 110 of computer 100. Core computer 101 may include user input and output capabilities integrated into the housing of the core computer, such as visual display 111 (which may be, for example, a liquid crystal display) to display information and to receive pen-based entries. For an alternate embodiment of the present invention, core computer 101 may include one or more sockets to attach additional, separate output devices such as, for example, a visual display, headphones, or a flash memory device. Core computer 101 may also include one or more sockets to attach additional, separate input devices such as, for example, a mouse, a tablet or visual display for pen-based entries, a microphone, a keyboard, or a flash memory device.

Core computer 101 may include a battery (either permanent or removable) to power the processor and other components of the core computer when the core computer is operating in its undocked, independent mode. When docked, the battery may be charged by the power supply of notebook computer 100 as described in more detail below.

Figure 2 is a schematic diagram of notebook computer 100 and core computer 101 when the core computer is docked in the notebook computer. Core computer 101 includes core processor 200 coupled to core hub 205. Core hub 205 enables communication between core processor 200 and core memory 210, core output controller 215, and core input controller 220 to which it is coupled. Core hub 205 is also coupled to interface 260. In addition, core computer 101 includes battery 255 coupled to interface 260. Notebook computer 100 includes notebook

hub 230 to enable communication between core hub 205, via interface 260, and notebook memory 235, notebook output controller 240, and notebook input controller 245 to which notebook hub 230 is coupled. In addition, notebook computer 10 includes notebook power supply 250 coupled to interface 260.

Interface 260 of Figure 2 includes power and ground lines to couple power supply 250 (whether it be driven by a battery or an electrical outlet) of notebook computer 100 to core battery 255 of core computer 101. When docked, the power supply of notebook computer 100 may be used to charge battery 255. For an alternate embodiment of the present invention, the battery of the core computer is not rechargeable and may not be coupled to the power supply of the host computer when the core computer is docked.

By providing power to core processor 200, core hub 205, core memory 210, core output controller 215, and core input controller 220, battery 255 may used to power independent operation of core computer 101 when the core computer is undocked. In addition, battery 255 of Figure 2 may be used to power these components of core computer 101 when the core computer is docked. For an alternate embodiment, however, the components of the core computer are powered by the power supply of the notebook computer when the core computer is docked. For one embodiment of the present invention, battery 255 includes one or more rechargeable or unrechargeable removable batteries, such as AA batteries, or one or more permanent, rechargeable batteries.

Core output controller 215 of Figure 2 may be coupled to one or more output interfaces of core computer 101, such as a visual display, a speaker or headphone,

an external storage device, or a wireless communication transceiver. Core input controller 220 may be coupled to one or more input interfaces of core computer 101, such as a mouse, a tablet or visual display for pen-based entries, a microphone, a keyboard, an external storage device, or a wireless communication transceiver. Similarly, notebook output controller 240 may be coupled to one or more output interfaces of notebook computer 100, such as a visual display, a speaker or headphone, or external storage device. Notebook input controller 245 may be coupled to one or more input interfaces of notebook computer 100, such as a mouse, a tablet or visual display for pen-based entries, a microphone, a keyboard, or an external storage device.

For one embodiment of the present invention, the functionality provided by core computer 101 when in undocked, independent operation as a hand-held device is less demanding on core processor 200 of Figure 2 than the demands made on the processor by notebook computer 100 when the core computer is docked. For example, core computer 101 may run relatively simple electronic calendaring, name/number addressing, and email viewing applications when undocked. In contrast, notebook computer 100 may additionally run spreadsheet, word processing, photo editing, video editing or playback, high resolution graphics gaming, or presentation applications when core computer 101 is docked. The difference in performance demands made on core processor 200 when undocked versus when docked, coupled with the more limited power supplied by core battery 255 versus that supplied by notebook power supply 250, may promote various design modifications.

For example, for one embodiment of the present invention, core processor 101 of Figure 2 may operate in one of two or more modes. In a "high power" mode, core processor 101 operates at a nominal voltage and nominal frequency. In a "low power" mode, core processor 101 operates at a lower voltage, a lower frequency, or both a lower voltage and lower frequency in comparison to the nominal voltage and nominal frequency. When operating as the system processor of undocked core computer 101, core processor 101 may operate in the low power mode. When operating as the system processor of notebook computer 100 (i.e. with core computer 101 docked), core processor 101 may operate in the high power mode.

For an alternate embodiment of the present invention, the core processor may operate in a high power mode when operating as the system processor of undocked core computer 101. This embodiment may be found useful if, for example, additional processing power is needed or desired, according to user preference, or one or more other factors are considered such as available electrical power. For another embodiment, the core processor may operate in a low power mode when operating as the system processor of notebook computer 100 (i.e. with core computer 101 docked). This embodiment may be found useful if, for example, less processing power is needed or desired, according to user preference (e.g. to extend battery life), or one or more other factors are considered such as available electrical power or thermal management (e.g. processor overheating). The core processor may switch between the low and high power modes of operation during a single session, or the switch may require a shut-down and re-boot of the system.

For one embodiment, interface 260 may additionally include a thermal interface between core computer 101 and notebook computer 100. This thermal interface may serve to dissipate heat from core processor 200 to notebook computer 100 (and to the ambient environment) when core processor 200 operates as the system processor of the notebook computer with core computer 101 docked.

For another embodiment of the present invention, core memory 210 of Figure 2 may include a mini operating system to be booted and run on core computer 101 when in its undocked, independent, hand-held mode of operation. For this embodiment, notebook memory 235 may include a full operating system to be booted and run on notebook computer 100 when core computer 101 is docked. As used herein, the terms mini and full, as applied to an operating system, are relative terms with respect to each other, wherein a mini operating system is smaller in size and provides lesser functionality than a full operating system. The mini and full operating systems may include the same core operating system. The mini operating system may be a subset of the full operating system or may include additional components to provide different and reduced functionality in comparison to the full operating system, and to support fewer or different devices.

Core memory 210 of Figure 2 may include dynamic random-access-memory (DRAM) and flash memory or other electrically programmable read-only-memory (EPROM). The non-volatile memory of core memory 210 stores the mini operating system and application software that enables core computer 101 to operate in its independent, undocked mode. The volatile memory (e.g. DRAM) of core memory

210 may function as the main system memory for core processor 200 when core processor 200 operates as the system processor of undocked core computer 101.

Notebook memory 235 of Figure 2 may include DRAM to function as the main system memory for core processor 200 when core processor 200 operates as the system processor of notebook computer 100 (i.e. when core computer 101 is docked). For an alternate embodiment of the present invention, core memory 210 of core computer 101, alone or in addition to notebook memory 235, functions as the main system memory for core processor 200 when core processor 200 operates as the system processor of notebook computer 100. Notebook memory 235 of Figure 2 may additionally include non-volatile storage such as a hard drive or CD-ROM.

Data received via core input controller 220 may be stored in core memory 210 of core computer 101 of Figure 2 when core computer 101 is operating independently while undocked. This newly received data may update stale data that was previously stored in core memory 210. This stale data may also have been previously stored in notebook memory 235 of notebook computer 100. In accordance with one embodiment of the present invention, when core computer 101 is docked into notebook computer 100, core memory 210 synchronizes with notebook memory 235. During the synchronization process, newly stored data that updates stale data in core memory 210 is provided to notebook memory 235, via interface 260, to similarly update the stale data in notebook memory 235. For one embodiment of the present invention, synchronizing the memory occurs

automatically when core computer 101 is docked. For another embodiment, synchronizing the memory occurs in response to a user request.

This invention has been described with reference to specific exemplary embodiments thereof. It will, however, be evident to persons having the benefit of this disclosure that various modifications and changes may be made to these embodiments without departing from the broader spirit and scope of the invention. The specification and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense.

CLAIMS

What is claimed is:

1. An electronic device comprising:

a housing to enable the device to be docked into a notebook computer;

an interface disposed on a surface of the housing to enable communication between the device and the notebook computer when the device is docked; and

a processor to operate as a system processor of the notebook computer when the device is docked and to operate as a system processor of the device when the device is undocked.

2. The electronic device of claim 1, further comprising an input controller to receive input data into the device when the device is undocked.

3. The electronic device of claim 2, further comprising core memory to store the input data when the device is undocked.

4. The electronic device of claim 3, further comprising an output controller to provide output data from the device when the device is undocked.

5. The electronic device of claim 4, further comprising a visual display disposed on a surface of the housing, the visual display being coupled to the input controller to provide the input data via pen-based entries on the display and

being coupled to the output controller to provide the output data via the display.

6. The electronic device of claim 1, further comprising core memory having stored thereon a mini operating system.

7. The electronic device of claim 1, further comprising a battery to provide power to the processor when the electronic device is undocked.

8. The electronic device of claim 7, wherein the interface is coupled to the battery to charge the battery when the electronic device is docked.

9. The electronic device of claim 8, wherein the notebook computer is to provide power to the processor when the electronic device is docked.

10. The electronic device of claim 9, wherein the processor is to operate at a higher frequency and at a higher voltage when the device is docked than when the device is undocked.

11. The electronic device of claim 1, wherein the processor is to operate at a higher frequency and at a higher voltage when the device is docked than when the device is undocked.

12. A base computer comprising:

a docking port to receive a hand-held core computer having a processor to operate as a system processor of the base computer when the device is docked and to operate as a system processor of the core computer when the device is undocked; and

an interface in the docking port to enable communication between the core computer and the base computer when the core computer is docked.

13. The base computer of claim 12, further comprising base memory having stored thereon a full operating system, the core computer comprising core memory having stored thereon a mini operating system.

14. The base computer of claim 12, wherein the interface is to couple a power supply of the base computer to a battery in the core computer to charge the battery and to provide power to the processor when the core computer is docked.

15. The base computer of claim 14, wherein the processor is to operate at a higher frequency and at a higher voltage when the processor operates as a system processor of the base computer than when the processor operates as a system processor of the core computer.

16. The base computer of claim 12, wherein the processor is to operate in one of a high power mode and a low power mode according to user preference.

17. A method of operating a computer system comprising:

operating a processor as a system processor of a notebook computer when a core computer is docked in a docking port of the notebook computer; and

operating the processor as a system processor of the core computer when the core computer is undocked.

18. The method of claim 17, further comprising synchronizing memory of the notebook computer with memory of the core computer when the core computer is docked.

19. The method of claim 17, further comprising charging a battery in the core computer when the core computer is docked.

20. The method of claim 17, wherein operating the processor as a system processor of the notebook computer includes operating the processor at a higher frequency and voltage than when operating the processor as a system processor of the core computer.

21. The method of claim 17, wherein operating the processor as a system processor of the notebook computer includes running a full operating system on the processor, and operating the processor as a system processor of the core computer includes running a mini operating system on the processor.

ABSTRACT OF THE DISCLOSURE

A notebook computer includes a docking port to receive a core computer. The processor of the core computer serves as the system processor for the notebook computer when the core computer is docked in the notebook computer. When the core computer is undocked, the processor serves as the system processor for the core computer. The core computer may boot a mini operating system when undocked, whereas the notebook computer may boot a full operating system when the core computer is docked. The processor of the core computer may operate at a lower voltage and at a lower frequency when serving as the system processor for the core computer than when serving as the system processor for the notebook computer. When the core computer is docked, the notebook computer memory is synchronized with the core computer memory, and a battery in the core computer is charged.

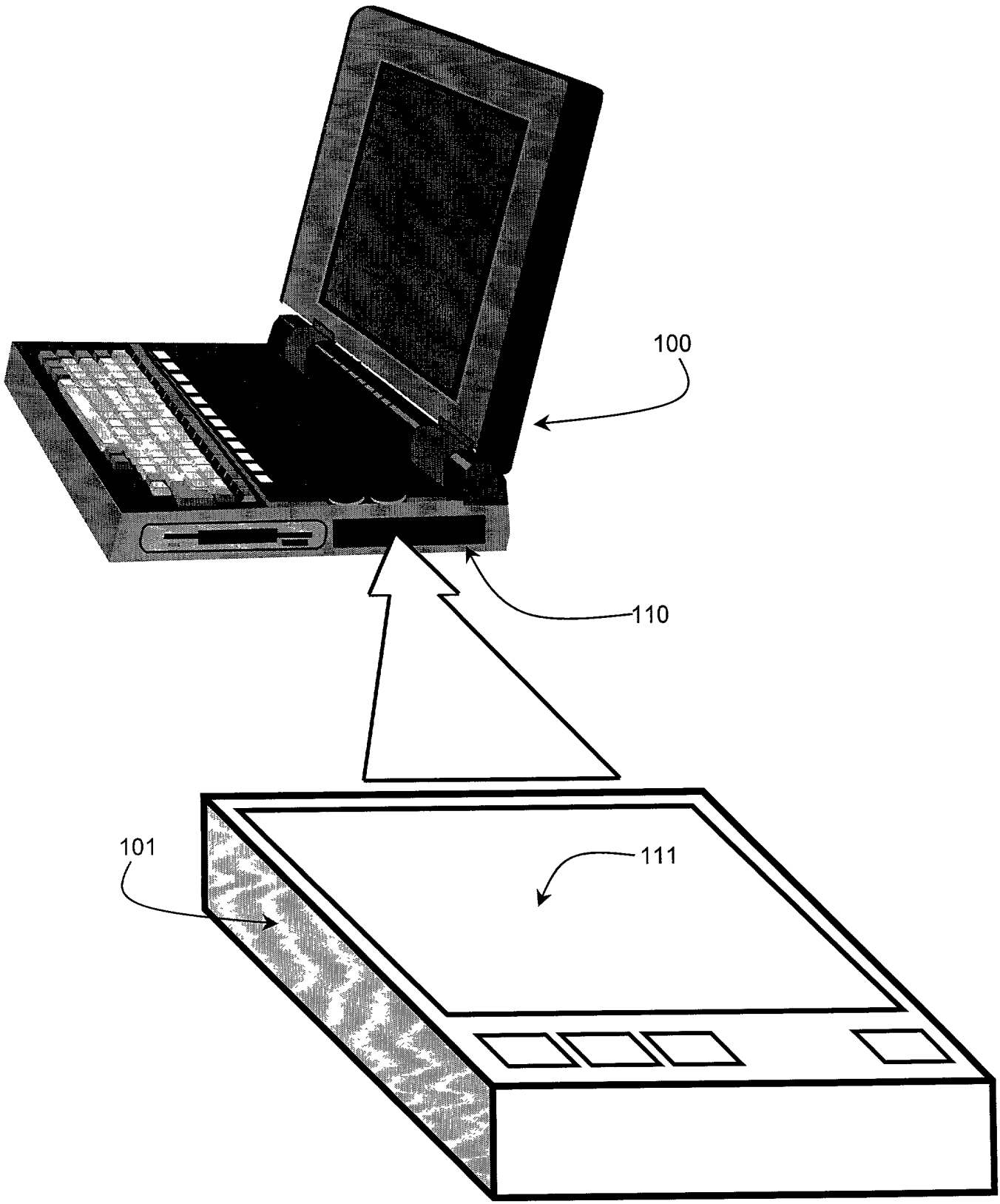

Figure 1

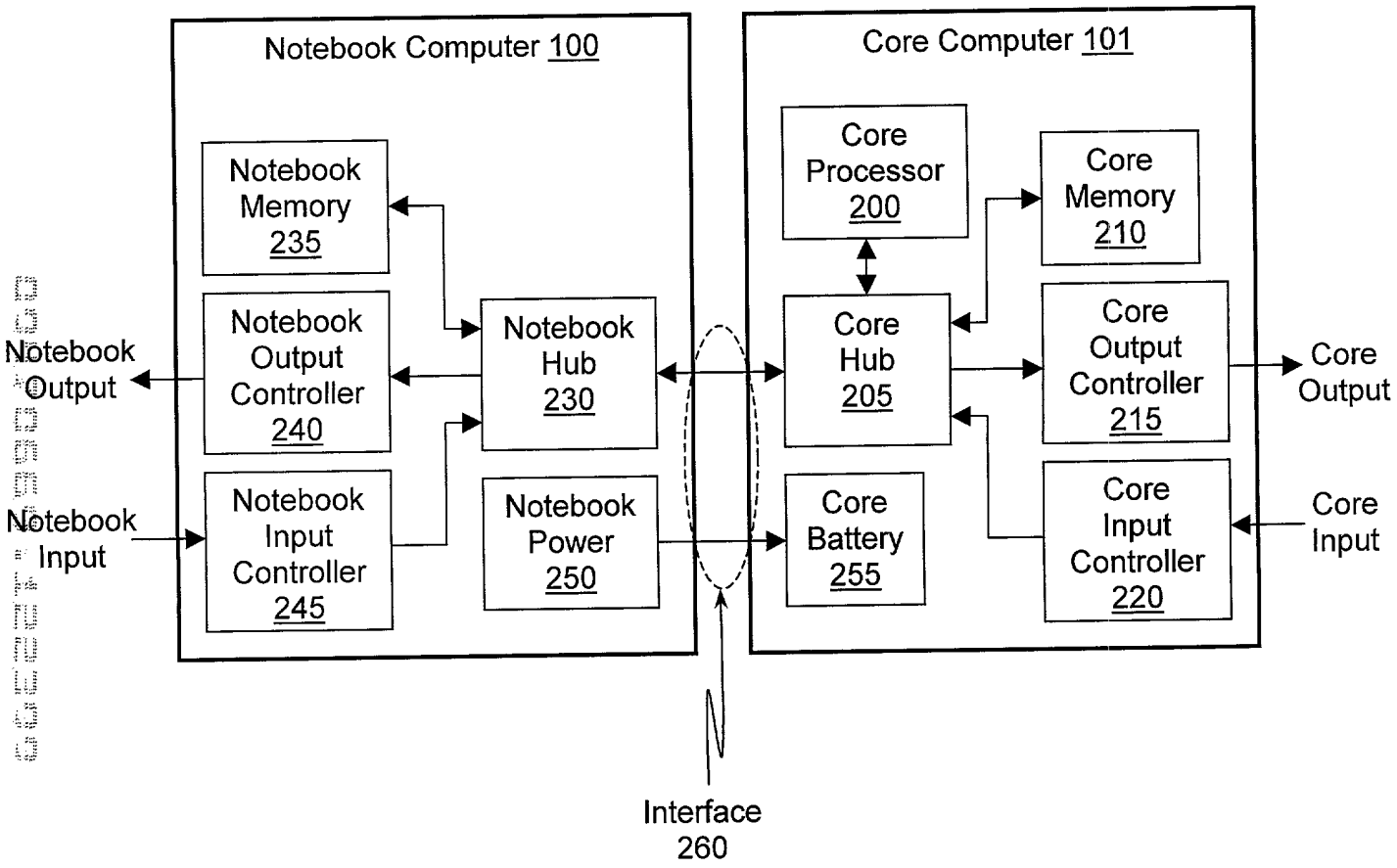
Notebook Computer 100
Core Computer 101
Notebook Memory 235
Notebook Output Controller 240
Notebook Hub 230
Notebook Input Controller 245
Notebook Power 250
Core Processor 200
Core Memory 210
Core Hub 205
Core Output Controller 215
Core Battery 255
Core Input Controller 220
Notebook Output
Notebook Input
Core Output
Core Input
Interface 260

Figure 2

Attorney's Docket No.: 42390.P8085 PATENT

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION
(FOR **INTEL CORPORATION** PATENT APPLICATIONS)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled NOTEBOOK COMPUTER WITH INDEPENDENTLY FUNCTIONAL, DOCKABLE CORE COMPUTER

the specification of which

X is attached hereto.

_____ was filed on _____ as United States Application Number _____ or PCT International Application Number _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

Application Number	Filing Date
Application Number	Filing Date

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Application Number	Filing Date	Status -- patented, pending, abandoned
Application Number	Filing Date	Status -- patented, pending, abandoned

I hereby appoint the persons listed on Appendix A hereto (which is incorporated by reference and a part of this document) as my respective patent attorneys and patent agents, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to David Kaplan, **BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, 12400 Wilshire Boulevard 7th Floor, Los Angeles, California 90025 and direct telephone calls to** David Kaplan, **(408) 765-1823.**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole/First Inventor Kelan C. Silvester

Inventor's Signature Kelan C. Silvester Date Dec 17, 1999

Residence Portland, Oregon (City, State) Citizenship U.S.A. (Country)

Post Office Address 19840 NW Metolius Drive
Portland, OR 97229